

CALIBRATION OF TRANSMIT AND RECEIVE CHAINS IN A MIMO COMMUNICATION SYSTEM

ABSTRACT

Techniques for calibrating the transmit and receive chains at a wireless entity are described. For a pre-calibration, N first overall gains for a receiver unit and N transmitter units in the transmit chain are obtained, where $N > 1$. Each first overall gain is for a combined response for the receiver unit and the associated transmitter unit. N second overall gains for a transmitter unit and N receiver units in the receive chain are also obtained. Each second overall gain is for a combined response for the transmitter unit and the associated receiver unit. The gain of each transmitter unit and the gain of each receiver unit are determined based on the first and second overall gains. At least one correction matrix is then derived based on the gains of the transmitter and receiver units and is used to account for the responses of these units.